1887MNRAS..47..521H

Assuming a mean value of −6 at the opposition of 1882–83, or early in the year 1883, and dividing by 2·9, we have −2·1 as the mean radial velocity of *Sirius*.

Jamaica: 1887, *March* 26.

Observations of Comets and of Sappho (80) *Harrow.*

By G. L. Tupman.

Revised Geocentric places of Comet 1884 *III.* (*Wolf*).

(*Monthly Notices R.A.S.*, xlv. 403.)

1884–5.	Greenwich Mean Time. h m s	☄ App. R.A. h m s	☄ App. Decl. ° ′ ″	Log. Δ.	Star.
Sept. 24	10 38 0	21 17 23·36	+20 36 20·9	9·9036	1
25	9 46 4	21 17 58·81	+20 9 42·6	9·9030	2
27	10 45 50	21 19 22·76	+19 12 37·4	9·9019	3
Oct. 4	9 17 52	21 25 33·82	+15 51 52·0	9·9014	4
	9 59 47	21 25 35·90	+15 51 1·1	9·9014	4
	10 23 34	21 25 36·89	+15 50 35·6	9·9014	4
13	11 29 16	21 36 55·31	+11 24 18·8	9·9072	5
22	9 30 22	21 51 21·09	+ 7 12 33·6	9·9200	6
26	10 4 32	21 58 49·15	+ 5 26 35·6	9·9277	7
Nov. 7	10 27 53	22 23 57·02	+ 0 49 41·1	9·9566	8
8	9 40 20	22 26 7·26	+ 0 30 21·7	9·9593	9
18	9 41 0	22 49 39·28	− 2 22 34·2	9·9890	10
19	6 19 34	22 51 45·38	− 2 35 6·7	9·9918	10
20	9 28 34	22 54 31·77	− 2 50 55·4	9·9954	11
21	5 56 32	22 56 37·57	− 3 2 30·8	9·9981	12
Dec. 9	6 34 15	23 42 25·41	− 5 45 27·5	0·0589	13
15	6 1 59	23 57 52·08	− 6 9 13·4	0·0796	14
Jan. 7	6 48 36	0 56 56·32	− 5 53 8·2	0·1618	15
	6 48 36	0 56 56·30	− 5 53 10·6	0·1618	16
Feb. 5	6 56 43	2 8 27·96	− 3 9 17·7	0·2538	17

The times have not been corrected for aberration.

Comet 1885 *II.* (*Brooks*).

(*Monthly Notices*, xlvi. 123.)

1885.	Greenwich Mean Time. h m s	☄ App. R.A. h m s	Lfp.	☄ App. Decl. ° ′ ″	Lfp.	Star.
Sept. 6	9 54 15	14 3 47·40	+8·719	+38 24 18·7	+9·847	18
9	9 29 21	14 21 28·30	+8·730	+39 38 44·1	+9·808	19
11	9 28 15	14 33 55·00	+8·736	+40 23 9·7	+9·795	20
13	9 42 43	14 46 53·56	+8·738	+41 3 29·9	+9·806	21
	9 42 43	14 46 53·53	+8·738	+41 3 25·4	+9·806	22

Some small errors were discovered in the reductions.

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Comet 1886 I. (Fabry).

		☄−* Δα	☄−* Δδ	Comp.	☄α	Par.	☄δ	Par.	Star.
1885.	h m s	m s	′ ″				° ′ ″		
Dec. 7	10 26 50	−0 28·70	+ 1 52·0	9	0 24 59·91	+[8·513]	+20 52 29·8	+[9·762]	23
10	10 5 1	−1 28·31	− 1 1·1	14	0 18 36·78	+[8·505]	+20 48 19·8	+[9·761]	24
27	9 43 17	−0 6·58	+ 0 22·8	11	23 50 8·68	+[8·604]	+20 43 13·1	+[9·803]	25
1886.						s			
Jan. 26	6 45 32	−2 30·07	+ 0 6·6	7	23 26 54·35	+·18	+22 51 22·2	+ 2·8	26
28	6 49 48	−0 40·61	+ 0 9·3	10	23 26 11·05	+·19	+23 7 14·3	+ 2·9	27
30	6 32 34	+0 10·54	− 0 3·5	9	23 25 32·69	+·18	+23 24 5·8	+ 2·8	28
31	7 14 34	−0 45·42	+ 4 7·7	8	23 25 13·99	+·21	+23 33 7·1	+ 2·2	29
Feb. 2	6 30 41	−1 4·01	− 5 8·7	8	23 24 41·08	+·20	+23 51 15·0	+ 3·0	30
10	7 7 16	+0 24·67	− 3 20·3	6	23 22 58·83	+·24	+25 14 45·2	+ 3·4	31
25	7 32 57	−0 56·58	− 2 25·9	8	23 21 0·09	+·27	+28 33 59·1	+ 4·1	32
26	7 0 43	−1 41·15	− 4 34·1	6	23 20 52·23	+·27	+28 48 50·4	+ 4·0	33
27	6 52 45	−1 0·84	−11 33·5	3	23 20 45·29	+·28	+29 4 18·3	+ 4·0	34
	6 56 34	+2 18·31	+ 1 22·4	1	23 20 44·71	+·28	+29 4 9·6	+ 4·0	35
Mar. 3	7 1 3	+1 21·62	+ 3 27·3	6	23 20 15·99	+·29	+30 8 33·2	+ 4·2	36
8	7 11 20	+0 18·48	−11 40·3	6	23 19 33·73	+·30	+31 33 47·9	+ 4·7	37
9	7 5 34	−0 19·29	+ 0 46·6	11	23 19 24·35	+·30	+31 51 19·1	+ 4·7	38
11	7 14 57	+0 34·94	−10 30·5	6	23 19 4·62	+·30	+32 27 6·5	+ 5·0	39
31	7 53 9	+0 33·00	+ 0 30·8	5	23 18 3·43	+·34	+38 22 52·8	+ 8·5	40
Apr. 6	8 17 53	+2 7·03	− 4 18·8	9	23 23 3·89	+·35	+39 41 26·7	+10·7	41

December 23.—Comet very much brighter; fully 2′ diameter.

December 27.—Comet bright; nucleus sub-stellar.

January 26.—Very bright, nearly 6 mag. More than 3′, perhaps 5′ diameter; with bright central condensation, not stellar. Ring Micrometer used Dec. 7, to Jan. 30; Crossed Bars afterwards.

March 9.—Faint; very low. March 31.—Bright although so very low.

April 6.—Bright; only $5\frac{1}{2}°$ above the horizon. April 9. See *Ast. Nach.* 2723.

Comet 1886 *II.* (*Barnard.*)

	G.M.T.	☄−✱ Δα	☄−✱ Δδ	Comp.	☄α	Par.	☄δ	Par.	Star.
	h m s	m s	′ ″		h m s		° ′ ″	″	
1885. Dec. 27	10 7 38	+0 59·22	+10 56·3	7	3 22 31·44	+·07	+ 7 31 54·2	+3·8	42
1886. Jan. 28	7 11 5	+0 14·48	+ 0 20·2	9	2 21 21·62	+·07	+13 27 33·9	+2·8	43
Feb. 1	6 54 42	−0 3·41	+ 0 45·8	11	2 16 28·49	+·08	+14 19 8·1	+3·2	44
2	7 2 12	−1 11·48	+14 1·2	5	2 15 20·42	+·09	+14 32 23·5	+3·2	45
26	7 25 36	+1 0·58	− 4 28·5	8	1 57 43·99	+·19	+20 19 54·9	+3·1	46
Mar. 3	7 15 22	+0 6·97	+ 7 57·1	7	1 55 53·04	+·20	+21 41 10·3	+3·2	47
8	7 29 43	−0 43·83	+15 57·9	5	1 54 27·41	+·22	+23 6 28·9	+3·3	48
9	7 21 22	−1 0·56	− 8 14·4	6	1 54 12·17	+·22	+23 23 57·4	+3·3	49
11	7 28 48	−1 0·38	+ 6 17·8	6	1 53 45·47	+·23	+23 59 44·7	+3·3	50
Apr. 3	9 0 56	+0 42·22	− 2 55·9	8	1 49 52·44	+·25	+31 48 53·1	+4·8	51
6	8 39 42	−0 16·87	− 3 35·2	9	1 49 8·62	+·26	+32 57 43·8	+4·9	52
8	9 20 14	+1 31·02	−10 37·3	7	1 48 33·99	+·23	+33 45 17·9	+5·3	53
11	8 50 49	+1 3·82	+12 34·8	9	1 47 33·84	+·26	+34 55 57·8	+5·4	54
15	9 5 8	−2 21·39	− 3 7·7	8	1 45 51·57	+·25	+36 30 48·0	+5·9	55

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December 27.—Comet pretty bright; not so bright as Fabry's; diam. 90″; nucleus sub-stellar, admitting of accurate observation. Ring Micrometer used Dec. 27, and Jan. 28; Crossed Bars afterwards.

January 28.—Diameter 90″. Coma extended in direction 120° or 130°.

February 1.—Diameter 90″. Stellar nucleus (?) of 9½ or 10 mag.

March 9.—Comet large, more than 2′ diam., perhaps 3′; very low.

April 3.—Very bright, although very low, may be 5 mag.; at least 3′ diameter.

April 15.—Comet faint owing to ☾ and haze.

Comet 1886 *V.* (*Brooks* 1.)

	G.M.T.	☄−* Δα	☄−* Δδ	Comp.	☄α	Par.	☄δ	Par.	Star.
1886.	h m s	m s	′ ″		h m s		° ′ ″	″	
May 6	10 27 27	−3 18·48	− 7 6·8	9	1 27 21·84	+·01	+57 16 30·5	+6·4	56
15	9 48 27	−0 37·07	− 4 30·1	10	2 19 35·61	+·11	+49 58 53·3	+6·9	57
18	9 40 18	+0 52·56	− 5 19·4	6	2 34 30·13	+·12	+46 59 22·0	+6·9	58
	9 49 34	+0 32·03	+ 7 4·4	5	2 34 31·46	+·12	+46 58 58·0	+6·9	59
	9 49 34	+0 21·26	+ 6 57·0	5	2 34 31·59	+·12	+46 58 57·7	+6·9	60
20	10 24 35	−0 5·17	+11 42·8	7	2 43 24·11	+·05	+44 53 23·6	+7·1	61

May 6.—Comet is about 9 mag. 2′ diameter, with central condensation but no visible nucleus (4½-inch refractor).

May 20.—Very near the horizon, must be 5 or 6 mag.

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Comet 1886 *IX.* (*Barnard-Hartwig.*)

	G.M.T.	☄−★ Δα	☄−★ Δδ	Comp.	☄α	Par.	☄δ	Par.	Star.
1886.	h m s	m s	′ ″		h m s	s	° ′ ″	″	
Dec. 19	5 31 27	−0 14·77	+5 40·2	13	18 17 3·15	+·33	+12 4 17·1	+5·8	62
23	5 23 15	+1 13·38	+3 30·0	6	18 46 5·93	+·29	+ 9 26 41·6	+5·4	63
	5 33 49	−1 56·16	−4 58·4	5	18 46 9·50	+·30	+ 9 26 23·6	+5·4	64
25	5 32 43	+0 50·08	−0 44·1	17	18 58 53·69	+·28	+ 8 7 9·9	+5·2	65
	5 34 0	−0 7·71	−0 48·3	17	18 58 54·03	+·28	+ 8 7 3·9	+5·2	66
27	5 25 16	−0 34·42	+5 42·0	13	19 10 32·71	+·27	+ 6 49 14·1	+5·1	67
30	5 56 24	+0 23·84	+7 47·1	9	19 26 25·12	+·26	+ 4 54 52·5	+4·9	68
31	5 37 26	−0 29·88	−5 38·9	10	19 31 11·90	+·25	+ 4 18 45·9	+4·9	69
1887.									
Jan. 5	5 35 31	−0 13·08	+4 34·94	15	19 52 45·40	+·23	+ 1 26 24·3	+4·6	70

December 18.—Comet very bright, circular, nucleus 15″ to 20″, diminishing to a stellar object as clouds pass over it. Coma extensive, perhaps 10′ diam. Tail 40′, perhaps 60′.

December 19.—Nucleus stellar, 7 mag. Coma 20^s in R.A. Air very thick, foggy.

December 20.—☄=ε Aquilæ exactly. Tail 7° towards 110 Herculis.

December 25.—Nucleus stellar, small.

December 30.—Nucleus not so distinct. December 31.—Still stellar.

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Comet 1887 . . . (*Barnard, May* 12).

1887.	G.M.T.	☄ − ✱ Δα	☄ − ✱ Δδ	Comp.	☄α	Par.	☄δ	Par.	Star.
	h s	m s	′ ″		h m s	s	° ′ ″	″	
June 12	11 38 22	−1 46·24	+ 3 53·0	11, 6	16 11 0·02	+·20	−8 43 40·3	+19·1	71
15	11 42 49	+1 16·66		13	16 17 43·99	+·24			72
	11 42 49		− 2 14·5	5			−6 29 54·0	+18·5	73
17	11 51 47	−0 35·36	+ 7 21·8	7	16 22 15·21	+·28	−5 4 15·2	+18·0	74
19	11 53 55	−1 20·24	−10 10·1	8	16 26 43·78	+·19	−3 43 12·5	+18·0	75
22	11 5 45	+0 44·24	+ 1 40·7	4, 2	16 33 29·14	+·13	−1 48 14·6	+17·2	76

Comet faint and small, condensed excentrically, admitting of pretty accurate observation (18-inch reflector). 11 or 12 mag. Ring Micrometer used, except on June 12.

Sappho (80)

1887	G.M.T.	Δα	Δδ	Comp.	(80) α	Par.	(80) δ	Par.	Star.
	h m s	m s	′ ″		h m s	s	° ′ ″	″	
Jan. 5	11 1 19	−0 49·77	− 4 42·5	10	7 8 13·90	+·08	+8 50 44·3	+ 4·27	77

Observed with the 18-inch reflector and bars carefully oriented.
The small corrections have been applied to all the above observations.

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		1886·0.		Mer. Obs.	Reductions to App. Place.	
		h m s	° ′ ″		s	″
62	L.L. 33895	18 17 17·07	+11 58 26·3	„ 2, 3	+0·85	+10·6
63	D.M. +9°, 3885	18 44 51·59	+9 22 59·7	„ 2	+0·96	+11·9
64	W.B. 1186	18 48 4·62	+9 31 10·0	Glasgow 3, 4	+0·96	+12·2
		4·72	9·7	Armagh$_2$ 7		
65	L.L. 35624	18 58 2·62	+8 7 39·0	Harrow 3	+1·03	+12·4
		2·53	40·3	Glasgow 2, 3		
66	W.B. 1474	18 59 0·71	+8 7 39·7	Harrow 3	+1·03	+12·5
67	Lamont 4063	19 11 6·04	+6 43 19·2	„ 2	+1·09	+12·9
68	W.B. 405	19 26 0·11	+4 46 52·2	„ 4	+1·17	+13·2
69	D.M. +4°, 4168	19 31 40·61	+4 24 11·4	„ 3	+1·17	+13·4
		1887·0.				
70	W.B. 1286	19 53 0·23	+1 21 45·3	Glasgow 2, 3	−1·75	+4·1
71	L.L. 29697	16 12 44·19	−8 47 36·0	Harrow 3	+2·07	+2·7
72	W.B. 272	16 16 25·26	−6 35 49·9	„ 3	+2·07	+3·4
73	S.D. −6°, 4425	16 18 19·29	−6 27 43·0	„ 4	+2·07	+3·5
74	L.L. 29970	16 22 48·50	−5 11 40·9	„ 3	+2·07	+3·9
75	L.L. 30118	16 28 1·95	−3 33 5·9	„ 5	+2·07	+3·5
76	Lamont 5231	16 32 42·83	−1 50 0·5	„ 3	+2·07	+5·2
77	Anonymous 9·2 mag.	7 9 2·80	+8 55 36·5	Cambridge 4	+0·87	−9·6

Observations of the Planet Sappho made at the Cambridge Observatory with the Northumberland Equatorial and Square-Bar Micrometer.

(*Communicated by Prof. J. C. Adams.*)

Greenwich Mean Time 1887.	R.A.	Decl.	Number of Comparisons.	Name of Comparison Star.
	h m s	° ′ ″		
Jan. 12·42844	7 0 35·22	8 59 37·46	10	Arg. +8°—1651
„ 20·40714	6 52 33·75	9 17 24·50	8	„ +9—1352
	6 52 33·89	9 17 27·27		„ +9—1353
	6 52 33·97	9 17 26·24		„ +9—1396
Jan. 25·42877	6 48 10·20	9 32 1·94	10	„ +9—1314
„ 26·38245	6 47 24·51	9 35 4·10	10	„ +9—1314
	6 47 24·38	9 35 2·90		„ +9—1330
Jan. 31·36133	6 43 49·78	9 51 44·70	12	„ +9—1297
Feb. 1·42203	6 43 9·62	9 55 37·46	10	„ +9—1276
Feb. 2·38874	6 42 34·78	9 59 6·72	10	„ +9—1276

Observations not corrected for Aberration and Parallax.